

LITHUANIAN ENERGY SECURITY: LITHUANIA'S DEPENDENCE ON ENERGY SUPPLY FROM RUSSIA

BY

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**LITHUANIAN ENERGY SECURITY: LITHUANIA'S DEPENDENCE ON ENERGY
SUPPLY FROM RUSSIA**

by

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ABSTRACT

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The supply of energy resources, their prices, and future evaluation have become an important issue for Lithuanian energy security, and for Lithuanian national security as well. Nowadays Lithuania is far too dependent on energy supply from Russia, not to mention the fact that currently Russia is pursuing a policy of exports expansion and is trying to increase the dependence of Lithuania and all the European Union (EU) on energy imports from Russia. This paper will analyze the influence of energy security on national security, and particularly the impact of the state's energy policy on national security. Also, the Lithuanian law on energy, international treaties which could influence Lithuania's energy policy, and EU restrictions on the state's energy policy will be assessed. An analysis of Lithuania's dependence on energy and energy resources supply from foreign countries will be undertaken, as well as Russia's energy interests in Lithuania, and how Russia uses energy supply as a lever in its bilateral relations. Finally, analysis of the challenges and prospects of integrating Lithuania's energy sector into the Western energy sector will be provided. The paper will culminate with some conclusions and recommendations.

LITHUANIAN ENERGY SECURITY: LITHUANIA'S DEPENDENCE ON ENERGY SUPPLY FROM RUSSIA

Economic interdependence and particularly dependence on the supply of energy resources often creates problems for the economic and general security of the state. Therefore it is more and more often claimed that the nature of national security and the specifics of threats are changing, with new types of threats emerging alongside traditional military threats. Influenced by globalization, more and more often the world speaks about threats of economic conflicts, economic dependence and others¹. In order to survive and prosper, a state must ensure permanent access to energy supplies, the essential economic conditions of survival as well as of economic growth. Economic growth is one of the major conditions guaranteeing the economic security of a state. Russian academician L.I. Abalkin states that “economic security is the totality of circumstances and factors which ensure independence, stability, and capacity of consistent renewal of the national economy”². Thus awareness of economic threats and their assessment must be carried out very thoroughly. Nowadays the concept of energy security is treated very diversely. Most often energy security is comprehended as an aspiration to ensure the energy needs of various energy consumers, to protect the economic interests of the community and the state from internal and external threats. In the National Energy Strategy, prepared by the Lithuanian Energy Institute, the energy security of a country is defined in the following way:

Energy security – the whole complex of the State's actions and measures which secure the degree that fuel and energy services are available to ensure conditions for the stable economic development and protection of national welfare as well as minimization of risks associated with supply and use of fuel and energy services. To preserve national interests, reduce the country's vulnerability to pressures and threats, energy security

in a wider sense includes energy supply, economic, technological, environmental, social and cultural dimensions³.

As we can see from this definition, energy security must be analyzed taking into consideration its complexity. Therefore the Lithuanian National Energy Strategy defines the content of energy security as the totality of various conditions⁴. However, dependence on energy supplies is one of the crucial conditions ensuring the economic and energy security of Lithuania. For Lithuania, as well as other countries importing energy resources, the main criterion of energy security is “supply security”, i.e. the availability of sufficient supplies at affordable prices⁵. In order to ensure energy security it is required to have a variety of various energy resource suppliers from various countries. Thus, in case of energy resource disruption from one country, the lack can be compensated from another. The Lithuanian National Energy Strategy affirms that one of the major factors influencing stable energy activity in Lithuania is the domination of Russia in the sphere of primary energy resources import to Lithuania, as well as the dependence of gas and electricity supply systems on the energy systems of Russia and absence of energy systems and junctures with Western Europe⁶. Meanwhile, the countries exporting energy resources emphasize “safe demand”, i.e. guarantees of a long-term demand under pre-arranged conditions, as well as control of the state power and political monopolies on energy resources, export pipelines and distribution networks⁷. We can observe how Russia is implementing this kind of concept, concentrating exporting power, narrowing competition terms and consolidating its monopolistic position while exporting energy resources to Lithuania. Thus, there is an obvious contraposition between Lithuania as an importing country and Russia as an exporting country, which definitely aggravates the political and economic dialogue

between the countries. The above described situation when Lithuania becomes dependent on energy resources supply from one country accelerates the necessity to diversify energy supply and search for opportunities to expand the variety of energy resources supply⁸. In order to ensure its energy security Lithuania obviously needs to carry out a well considered and balanced energy policy involving political, economic and technical aspects.

Various legal documents of the Republic of Lithuania highlight the issues of energy security guarantees. The Lithuanian National Security Law asserts that energy supply is one of the essential factors strategically important for the national security. In the same law the government of Lithuania is obliged to provide for the development of alternative energy sectors (sustainability of atomic energy among them) and to ensure supply of resources which are independent from monopolistic suppliers and essential for national security. The law also maintains that provision with energy resources cannot be given to the control of the subjects from the supplying countries. These provisions of the law attempt to prevent the domination of Russian energy companies in the energy economy of Lithuania, at the same time projecting preferences for the arrival of Western companies' investments into the Lithuanian energy sector⁹.

Another strategic document defining the issues of Lithuanian energy security is the Lithuanian National Security Strategy. This document determines the core goals and measures of national security policy. It includes political, defense, economic, and other spheres of activity. Energy sector security, as a sphere of economic activity, is very precisely defined in this document. One of the primary interests, without protection of which the vital interests of Lithuania could be violated, is ensuring supply sources of

strategically important raw materials and alternative energy, as well as development of strategically important regional infrastructure objects¹⁰.

The above mentioned document also lists the risk factors, dangers, and threats for the national security of Lithuania, the most important being excessively high dependence on strategic resources and energy supply from one country. Among the economic factors which can threaten national security, citizens' welfare, the independence of the country or its constitutional system is the takeover of property management control in strategically important economy sectors with the goal of impairing economic security. In this case companies in the energy sector are claimed to be one of the fundamentally important contributors to national security¹¹. Besides, it is easy to notice that while emphasizing dependence on strategic raw material and energy supply from one country, the document in fact acknowledges the dependence of the Lithuanian energy sector on Russia. Lithuanian national security can face a real danger if Russia takes over the asset management control of Lithuanian energy companies, because in Russia there is no guarantee of a functioning free market, while the influence of central government on business markets is really significant. In Russia, unlike countries with a developed market economy, the energy sector is primarily a matter of politics, and only then – of business. The decisions of Russia concerning the energy sector are not always based on economic principles, especially in the case when energy issues can be used as political levers. According to Keith C. Smith, a former U.S. ambassador (1997-2000) in Lithuania, "Moscow's pursuit of a 'divide-and-conquer' policy toward Europe has not diminished. It continues to increase Russian leverage over the foreign and commercial policies of several EU member states. Gazprom is able

to charge the poorer Baltic states higher natural gas prices than it does Germany or Italy, in part due to the weaker bargaining position of the CSEE states”¹².

During the last decade, upon Lithuania’s becoming a member state of the EU and NATO, the direct military threat has been minimized. Unfortunately, due to the existing integration of the Lithuanian energy sector into Russian energy systems and dependence on resource supply from this country, Lithuanian energy security is still problematic. Therefore the Parliament (Seimas) of the Republic of Lithuania, having evaluated the position of Lithuania after integration into Western defense and economic institutions, as well as general regional and world energy tendencies, in 2005 committed the Government to revise the national energy strategy adopted in 2002.

The new energy strategy was ratified in January 2007, being the third Lithuanian energy strategy since the restoration of independence in 1990. Unlike the former strategies, this document asserts Russia as a potential threat to the Lithuanian energy sector. This strategy also claims that energy strategy is a complex part of national security. Apart from that, it determines the increasing influence of energy leverage on the formation of foreign and national security policy as one of the global phenomena threatening national security¹³.

The 2007 energy strategy encourages Lithuania to participate in the common EU energy policy development process, and relate its energy security with integration of its energy systems into EU energy systems which would ensure equal energy security for Lithuania, just as for other member states of the EU. Apart from that, this document emphasizes that it is essential to create opportunities and develop measures to effectively neutralize or compensate for the threats due to the dependence on energy

supply from Russia or to reduce their damage, simultaneously using all acceptable ways to reduce dependence. This strategy asserts that Lithuania will try to achieve greater energy security on three levels: the European Union, regional, and national. On the national level it is planned to solve the issues of primary energy resources development and energy resources balance. On the regional level it is planned to support partnership and cooperation, which would facilitate a common regional security approach. On the EU level Lithuania will try to see that the common Baltic (Lithuanian, Latvian, and Estonian) energy security issue is solved in a complex way, as a guarantee of competitiveness and energy security¹⁴.

On 6 October 2010 the Government of Lithuania presented the National Energy (energy independence) Strategy and submitted it for discussion to the Parliament of Lithuania. It is the latest document defining the primary goals of the Lithuanian energy sector and the directions of their implementation until 2050. One of the fundamental goals of energy policy directions and actions is ensuring Lithuanian energy independence until 2020¹⁵. The necessity to revise the present-day energy strategy was caused by the aspiration to ensure Lithuanian energy independence, competitiveness of the energy sector, and balanced development with regard to essential changes in the Lithuanian energy sector since 2007, as well as the EU energy policy initiatives. Also, the need to revise the strategy was caused by the closing down the Ignalina Nuclear Power Station. Having carried out the analysis of the energy sector and having evaluated the Lithuanian energy sector challenges, the Lithuanian Government formulated three key principles on the basis of this strategy – energy independence, competitiveness, and cohesive development. The energy independence principle

basically defines ensuring energy independence from Russia. It supposes that the energy needs of Lithuania will be satisfied by using local and diversified energy resources, which is an essential condition for ensuring the reliable functioning of the energy system and for preventing possible energy supply disruptions¹⁶.

Having analyzed the Lithuanian strategic documents by which the energy sector is defined, it is possible to notice two problematic aspects which attract most of the attention. Firstly, the Lithuanian energy dependence on Russia is emphasized, as well as the threats to Lithuanian energy and national security, arising from this factor. Secondly, a goal to integrate into the EU energy systems is clearly defined, in order to diversify energy resources, thus reducing the influence of Russia.

The common EU energy policy is of vital importance for Lithuania. In March the European Commission introduced the European Strategy for Sustainable, Competitive and Secure Energy, which, at least in the manner of political declarations, defines the energy sector guidelines of the expanded EU. In October 2010 the European Parliament approved the European Commission resolution which emphasizes five priorities: 1. Achieving an energy efficient Europe, 2. Building a truly pan-European integrated energy market, 3. Empowering consumers and achieving the highest level of safety and security, 4. Extending Europe's leadership in energy technology and innovation, 5. Strengthening the external dimension of the EU energy market¹⁷.

It is especially important for Lithuania that the resolution of the European Parliament claims that energy networks, “even if they are of commercial manner”, should be regulated by equitable international agreements, without violation of the interests of other member states¹⁸. This is important while speaking about projects like

Nord Stream, which are looked at with distrust not only with regard to environmental aspects, but also violate the solidarity principle of the EU member states – when one of the participating EU countries violates energy security interests of other member states. Projects such as Nord Stream should conform to EU internal market rules, including the rules regulating the entrance of third parties into the market. Even with some delay, the above mentioned document can prevent similar agreements, at the same time improving conditions ensuring energy security for member states.

Lithuanian Energy Security in the Background of Russian Geo-Energy Interests

Russian interests in Lithuania should be treated with regard to the geo-strategic interests of this country. Therefore, in order to understand the main interests of Russia in Lithuania, as well as in Central and Eastern Europe, it is necessary to evaluate the historical aspect of the relationships of these countries with Russia and the changing distribution of power and influence in the international system. Taking advantage of the changing situation, Russia tries to retrieve its former influence both in the Baltic States and Eastern Europe. “Moscow appears to be reemphasizing its 1990s era “red line” in terms of maintaining its “privileged role” in the affairs of former Soviet states”¹⁹.

It is also easy to notice that one of the basic strategic interests of Russia is to reduce the influence of the USA in Europe. Therefore in all possible ways it creates international policy combinations which eventually would serve this purpose. Despite the fact that Russia was not very successful in strengthening its power and influence using traditional political and diplomatic means, recently Moscow has had an excellent insight into the inner weaknesses of East European countries and the whole continent, especially the ones related to the economic and energy dependence on Russia. Therefore Russia uses its energy resources effectively, hoping to restore the status of a

super state and retrieve lost influence²⁰. It is also possible to see that nowadays due to the lack of a well coordinated and balanced EU energy policy and the fragile internal solidarity of Member States, the Kremlin is strengthening this dependence. One of the strategies adopted by Russia has been especially successful, when its near monopoly of gas and oil is used as a means of bribing and blackmail against Eastern European countries. This monopoly assists Moscow in creating alternative transit flows, which bypass Lithuania and other Eastern European countries. An example of such a strategy is Nord Stream, the German – Russian gas pipeline via the Baltic Sea. This project will provide Russia with even greater possibilities to dictate its conditions to Europe in the sphere of energy and influence the policy of Lithuania and other countries through the energy sector. Energy policy and national security expert Roman Kupchinsky claims:

Russian security policy appears to be betting heavily on resource nationalism in order to strengthen Russia's "benevolent" control of gas supplies throughout the Central and East European gas markets -the ultimate goal of which is the neutralization of the role played by these countries within NATO, along with the unending struggle to increase the profits for Kremlin-friendly Russian companies²¹.

This statement demonstrates that with regard to Lithuania Russia can simultaneously carry out another kind of action, which would threaten Lithuania, but would be beneficial to Russia. Lithuania, as a member state of the EU and NATO and being totally dependent on Russian energy resources, can be turned into a certain “influence agent” in these organizations. In organizations like NATO, where decisions are made in the way of total agreement, the Lithuanian political elite can face difficulties in case of openly declaring a position which is not favorable for Russia.

The international policy of the Kremlin is importantly built upon exported energy resources and participation in the energy markets of other countries, aiming at

controlling energy resources and energy infrastructure in these countries. In that way, penetrating into the Lithuanian energy system, Moscow strives to dominate in this sphere. But as Russian energy policy is one of the basic tools for ensuring national security, energy expert and analyst Robert Larsson indicates the main measures maintained by the Russian government in order to implement energy policy: supply interruptions (total or partial), threats of supply interruption (covertly or explicit), pricing policy (prices as carrots or sticks), usage of existing energy debts, creating new energy debts, and hostile takeovers of companies or infrastructure²². The above mentioned means, which Russia uses while implementing its energy policy, have a huge influence on modeling its foreign policy. This is obvious from the goals and objectives outlined in the 2003 energy Strategy of the Russian Federation:

Russia possesses great energy resources – its territory contains 1/3 of the world natural gas reserves, 1/10 of oil reserves, 1/5 of coal reserves and 14 % of uranium reserves – and a powerful fuel and energy complex, which is the basis of economic development and the instrument of carrying the internal and external policy²³.

The Kremlin leaders have often claimed that a state has to dominate in the energy sector and use it for economic purposes. According to R.Kupchinsky, Russian Prime Minister Vladimir Putin stated: "Russia enjoys vast energy and mineral resources which serve...as an instrument to implement domestic and foreign policy. The role of the country in international energy markets determines, in many ways, its geopolitical influence."²⁴ The Russian government does not limit itself by political declarations – in fact, the energy sector as a means of political pressure has existed for a long time. With regard to Lithuania, Moscow uses the means indicated by R.Larsson in one or another form. They might be simple threats, increase of prices, as well as temporary or total disruption of resource supply. One of the most memorable events was the economic

blockade in 1990 when the government of the Soviet Union terminated the energy supply for more than two months with the intention to make Lithuania back away from the search for independence²⁵. During the period of independence the oil supply from Russia into Lithuania was usually terminated with regard to Russia's unsuccessful aspirations to purchase the oil refinery Mazeikiu nafta, which provides vitally needed tax revenue for Lithuania (accounting for 10 percent of Lithuania's GDP). In 1999, after the US firm Williams International purchased the bigger part of shares and got the main operator's rights, Russia immediately reacted by reducing the oil supply to the minimum, thus making it unprofitable. In 2002 Williams International was forced to sell its share package to Yukos²⁶. But, as Yukos did not surrender to the Kremlin pressure, it was forced into bankruptcy, while the shares were purchased by the Polish oil firm PKN Orlen in 2006. Just as previously, the Kremlin immediately took action "to punish" disobedient Lithuania. The company Transneft, which is run by the Russian company, in July of the same year announced that the oil pipeline Druzba was to be closed due to the depreciation of the pipeline branch in the Briansk Region (Belarus), thus disrupting oil supply to the company PKN Orlen. It is obvious that this could have been evaluated as an economic or commercial misunderstanding. However, public comments by the Kremlin and Transneft, call this into question. For example "Transneft officials declared that the supply disruption would only affect oil shipments into Lithuania. Belarus, a neighboring state whose leadership is more closely aligned with Moscow, would continue receiving its full share²⁷". This indicates that centralized control of energy companies enables the Russian government to implement an energy policy which is favorable for Russia.

While implementing its energy policy, Russia manages to manipulate the prices for energy resources. Lithuania imports gas from only one source and so far the country does not have a substitute for the gas imported from Russia (natural gas makes up 33 percent of all the primary energy consumed in the country), the monopolistic company Gazprom. It is obvious that this company occupies a unique position in Russian economics and politics and is totally controlled by the Kremlin. According to Boris Nemtsov, Vice President during the period of Boris Yeltsin, Gazprom is an excellent weapon to blackmail the West, as well as V.Putin's personal project and a massive source of money – "Gazprom's annual profit reaches 94 billion dollars and this is the most powerful geo-political weapon."²⁸ Thus, Lithuania has very limited possibilities for negotiations when supply is in the hands of one monopolist. The gas supplied by Gazprom costs about one third more for Lithuania than other Western European countries. Lithuanian energy minister Arvydas Sekmoka indicates that Lithuania pays about 320 US dollars for 1 m³ of gas, in comparison with Germany which pays 220 US dollars²⁹. In order to reveal the full picture of the Lithuanian energy security against the background of Russian geo-political interests it is necessary to mention the project Nord Stream. The Russian gas monopolist is one the initiators and shareholders of this project. Gazprom owns 51percent and BASF/Wintershall and E.ON/Ruhrgas take 24.5 percent each³⁰. This notorious project will provide Russia with an even better possibility to dictate its conditions to Lithuania in the energy sphere and through energy affect the country's internal policy.

We should emphasize not only the Russian political interests, but also economic motives. Both supplement each other in Kremlin policy. Russian oil and gas companies

are interested in increasing their profits to the greatest possible extent and one of the ways to do that is to divert their capital and resource exports to foreign countries, because in the Russian market the prices of raw materials and the consumers' ability to pay are considerably lower than in the world market. For instance, in 1998 Gazprom received only 15 percent of the planned sum, while the accounts for 40 percent of the gas sold in the internal market were not settled at all. Meanwhile Lithuania does not have any debts to the company Gazprom³¹.

It is obvious that Russia tries to influence Lithuania, in the same way as other countries in the zone of its geo-political interests, through energy export and resource transit. The present tendencies suggest that in the future Lithuania can become even more dependent on the conditions dictated by Russia in the energy sector. One of the solutions to this problem would be the formulation and implementation of the unified EU policy on secure energy resource supply. However, Lithuania must find alternative energy and energy resource supply sources and reduce the dependence on Russia in the gas, oil and electricity sectors, without waiting for solutions and guarantees in the energy security sector from elsewhere.

Modeling the Lithuanian Energy Security According to Basic Energy Sectors

The Gas Sector and Its Diversification. Nowadays it is obvious that in the general context of Lithuania energy security the gas sector is the most vulnerable. The present gas pipeline system is not joined with Western European networks and has its only junction from Russia through Belarus, as well as a branch of the pipeline going from Lithuania to Kaliningrad Oblast (RF). It is therefore possible to claim that Lithuania does not have possibilities to take part in gas transit or to choose alternative gas supply sources and participate in the activity of the gas exchange. Consequently, the Russian

monopolist Gazprom can dictate its conditions not only for the amount of the supplied gas, but also the prices. The structure of the natural gas market has been unchanged for a number of years and Lithuania imports gas from only one supplier – the Russian gas monopolist Gazprom. According to the long term gas supply agreements, natural gas is bought by two main Lithuania suppliers, Lietuvos dujos and Dujotekana, which provide consumers with more than 99 percent of the gas sold in Lithuania. It is essential to note that 99 percent of the liquid gas is supplied by the company Lietuvos dujos³², having in mind that Gazprom owns 37.1 percent of the shares of this company³³. This indicates that Lithuania has very limited potential to influence the supplier's and importers' actions or to contradict their interests. The prices for heating and electricity, as well as the stable activity of the Lithuanian major industries, greatly depend on the price policy of Gazprom. The importance of the gas sector has significantly increased since the closing of the Ignalina Power Station in 2009, because this raw material has become the essential fuel in electricity production. According to the National Control Commission for Prices and Energy (NCC), in 2009 Lithuania consumed 2.26 billion cubic meters (Gm^3) of gas, while after the close down of the Ignalina Power Station in 2010 the forecasted amount to be consumed is 3.5 (Gm^3)³⁴. Without the possibility to choose an alternative gas supplier, Lithuania may not produce the necessary amount of electricity in case of disruptions from the only supplier. Such a situation threatens the energy, economic and national security of the country. This situation could be less threatening if Lithuania had a possibility to accumulate a reserve of natural and liquid gas. Unfortunately, today Lithuania does not have reservoirs of appropriate size where gas could be stored and consumed in case of necessity.

Possibly the greatest concern for Lithuania is the joint Russian/German pipeline project Nord Stream. It is a 1224-km-long natural gas transportation system via the Baltic Sea from Vyborg (Russia) to Greifswald (Germany). The system is due to start functioning in 2011 using one branch of the pipeline with the capacity of 27.5 billion cubic meters of natural gas per annum. According to this project it is planned to build the second branch of the pipeline by 2012, which would increase the capacity up to 55 billion cubic meters per year. The pipeline will supply natural gas to the Netherlands, UK, Denmark, Belgium, France, and other countries³⁵. It is easy to notice both the political and economic interests of the countries involved in this project. The interests of Germany are more pragmatic and economic, though not reflecting the common EU policy. As for Russia, political and geo-political interests dominate. The main shareholder of this project is Gazprom, who owns 51 percent of shares³⁶. This gas monopolist serves the purposes of Russian political and economic power and assists the Kremlin in playing a significant geo-political role. While implementing this project Russia aims at bypassing the Baltic States and Poland, thus eliminating them from Russian gas transit. In the future the Kremlin will have the possibility to use gas export to the above mentioned countries as a means of blackmail in order to achieve its political and economic goals, because if Russia turns off the 'gas tap' for disobedient neighbors, the Western countries will not be affected. Kaliningrad Oblast will not feel any negative effect either, because a branch of Nord Stream to Kaliningrad will be built³⁷.

While analyzing the possibility to diversify gas supply and consequently reduce dependence on one supplier, most specialists and the government of the country note

three main alternatives. The first is construction of the liquid gas terminal, which would be one of the best and fastest alternatives solving this problem. Secondly, joining of Lithuanian and Polish gas pipeline systems is an option. Thirdly, a natural gas reservoir should be built. Finally, gas supply and transit activities should be separated³⁸.

In July 2010 the Lithuanian Government, in order to implement its energy independence strategy, made a decision to build a liquid gas terminal in Klaipeda with the capacity of 3 billion cubic meters per year³⁹. Prime Minister of Lithuania Andrius Kubilius claims that construction of the terminal is directly related with implementation of the third package of the EU energy directive, which requires the separation of gas transit and distribution management. Without doing this there is no sense in building the terminal, as both the transit and distribution is run by Lietuvos dujos, the main shareholder of which is the Russian monopolist Gazprom⁴⁰. Therefore in May the Lithuanian Government approved a new natural gas law concept which indicates the need to conform with the requirements of the EU third energy package and separate the pipeline network from the asset of Lietuvos dujos⁴¹.

The project for joining the Lithuanian and Polish gas pipelines, is another important alternative for ensuring energy safety for Lithuania. This project has been initiated by the Lithuanian and Polish governments and is supported by the European Commission(EC). That is why in April 2010 the Polish gas transfer system operator Gaz-System S.A. and Lietuvos dujos signed a document defining cooperation principles while carrying out research work on the construction of the pipeline joining Poland and Lithuania. About 50 percent of the implementation of this project should be funded by the EC⁴².

Implementation of the above mentioned projects indicates that a serious step has been taken towards having an independent gas sector and integrating the Lithuanian gas sector into European systems. That would enable Lithuania to strengthen its energy security and ensure more favorable terms to negotiate prices of raw materials.

The Electricity Sector – Nuclear Energy and Joining Western European Systems.

The Lithuanian electricity sector can be analyzed having in mind two periods. The first, lasting until the closing of the Ignalina Power Station, can be described as the most stable and effective of all Lithuanian energy sectors. The second can be defined as the end of the Lithuanian nuclear energy period and start of dependence on a foreign supplier. The agreement on Lithuania joining the EU records the principled position of the European Commission – relating the closing of Ignalina Power Station with membership terms⁴³. Therefore closing down Ignalina Power Station at the end of 2009 was one of the main factors determining the reconstruction of the Lithuanian electricity sector and one of the reasons which caused a deterioration of the country's energy security.

After the shutdown of Ignalina Power Station, the capacity of existing electricity plants decreased from 5070MW to 3811 MW. The amount of electricity produced in thermo-power stations accounts for 70 percent, hydro-power stations – 27 percent and renewable sources – 3 percent of the total amount⁴⁴. In 2009 Lithuania sold to foreign countries 3.632TWh of electricity, while importing 0.70 TWh. In that year percentages of electricity exports were Russia - 5.48 percent, Belarus - 9-8.21percent, Latvia - 11.04 percent, Estonia - 64.36 percent, Scandinavian market – 10.91percent⁴⁵. However, experts forecast a zero export for 2010, while imports will include 4440.9 thousand

MWh from Russia and Belarus, 488.0 thousand MWh from Latvia, 839.6 thousand MWh from Estonia and Scandinavia⁴⁶. The data obviously demonstrates that since the beginning of 2010 Lithuania has converted from being an electricity exporter to an electricity importer. In addition this statistic reveals that until 2010 the main source of electricity in the country was Ignalina Power Station, which was able to produce cheaper electricity than that produced by plants using organic fuel. The price of electricity production is predicted to vary between 30-40 ct/kWh, i.e. 4-5 times higher than that produced by Ignalina Power Station⁴⁷. The increased expenditure for electricity production and higher price for electricity will directly influence the Lithuanian economy, dramatically increasing Lithuanian dependence on energy resources imported from Russia. Due to various internal and external conditions Lithuania did not manage to make timely decisions concerning further development of the electricity system. It is predicted that in 2015 most of the electricity (approx. 90 percent) will be produced in Lithuanian power plants consuming imported organic fuel, mostly natural gas (which can be supplied from the only one source) and fuel oil⁴⁸. Due to the absence of networks between Lithuanian and European energy systems Lithuania has to import natural gas, as well as the lacking electricity, from Russia, thus increasing dependence. Taking into consideration the fact that the Kremlin uses energy as a means to achieve its political goals, the threat to Lithuanian energy and national security has considerably increased. Entering the common EU electricity market has become one of the essential goals of the Lithuanian government.

In order to increase the strategic reliability of energy supply and energy security, in the 2007 National Energy Strategy Lithuania defined a goal to connect the Lithuanian

high voltage electricity transfer network with those of Poland (Lithuania – Poland, 1000MW link) and Sweden (Lithuania – Sweden, up to 1000MW link) by 2012. And no later than 2015 Lithuania, should start operating a new nuclear power plant⁴⁹.

In 2007 the Lithuanian Parliament (Seimas) passed a law which aims at defining the main principles of the new nuclear power plant project implementation and determining legal, financial, and organizational conditions⁵⁰. Up to date 13 preparation projects have been carried out, including an environmental impact assessment, an environmental audit of construction sites, measurements of hydrological and thermal balance of Druksiai Lake, evaluation of Ignalina NPP infrastructure, etc⁵¹. However, due to mistakes at the start of the project the planned operation of the new power plant may be delayed. During a presentation on implementation energy minister Arvydas Sekmokas claimed that the project is aimed at achieving construction of a new NPP in time to start generating electricity between 2018/2020⁵².

Two other Lithuanian strategic energy projects are being implemented much more successfully than that of the nuclear power station. Installation of electricity links with Swedish (NordBalt) and Polish (Lit-Pol Link) electricity systems will increase energy supply reliability, reduce dependence on Russian raw materials and other energy resources, ensure integration into the Western European electricity market, and encourage efficient use of other power plants and electricity trade⁵³. The aim of the NordBalt project is to construct an interconnection between Lithuanian and Swedish electric power systems. The line's approximate length is 450 km and the capacity is 700 MW. The interconnection is scheduled to be launched into operation in 2016⁵⁴. LitPol Link will interconnect the power systems of the Baltic States and West Europe. The 500

MW Poland-Lithuania power interconnection is scheduled to be launched into operation in 2015⁵⁵. Though implementation of these two projects is behind the schedule determined in the 2007 National Energy Strategy, they are still very auspicious. The participating countries demonstrate thorough interest in implementation, observing both its economic and national security benefit, especially when its implementation will be partially funded by the EU. The EU Commission decided on August 5, 2010 to co-finance the NordBalt electricity interconnection between Sweden and Lithuania. The EU will contribute EUR 131 million to the link. The estimated total costs of the project are approximately EUR 552 million⁵⁶.

The measures aiming at eliminating “energy island”, which were taken by the Lithuanian Parliament and Government together with other Baltic States and partners from Sweden and Poland can provide tangible results, even though they were rather delayed. With reference to Lithuanian energy security, the electricity link projects with Sweden and Poland are of extreme importance as they will extend the electricity market, providing an alternative to Russian electricity.

Conclusion

The research reveals that dependence of the Lithuanian energy sector on Russian energy resources is really considerable. Fourteen years after the restoration of independence in 1990 Lithuania has managed to integrate its economy into the economies of Western countries and to strengthen its defense potential by becoming a member of NATO. Unfortunately, even today the complete integration of Lithuanian energy sectors into the Russian energy sector controlled by the Kremlin threatens national security and influences the country’s foreign and security policy. It is also unprofitable economically.

It is essential to note that the importance of energy security has always been emphasized in Lithuania's main strategic security documents. The primary energy sector development goals are integration into the Western energy sector and regional cooperation in the energy sphere, as well as ensuring alternative supply of energy resources and raw materials. However, the research reveals that due to a variety of reasons the goals set about a decade ago have not been implemented or have been implemented only partially. The Butinge Oil Terminal can serve as a positive example as its operation guarantees uninterrupted import and export of oil and its products. Implementation of this project ensured an alternative for oil supply from Russia, making this sector less vulnerable. This is the reason why in this paper I analyzed the oil sector separately. Unfortunately, this does not refer to the gas and electricity sectors. Due to the fact that the earlier goals and objectives of the Lithuanian government were not implemented, as well as Russia's interests and actions, the above mentioned sectors have become even more vulnerable and dependent. The first factor diminishing the country's energy security is the absence of electricity network links with the EU electricity networks after the shutdown of the Ignalina power station. Owing to this Lithuania was forced to buy the deficient electricity from Russia and other Eastern neighbors controlled by the Kremlin. The second factor is that Lithuania is still in the initial stage of implementing the project for a liquid gas terminal. Without such a terminal Lithuania is not able to accumulate the necessary amount of gas in the event of supply disruption from the only supplier Gazprom. The third factor is the absence of a gas link with Poland. The two latter factors can be used by the Kremlin as a means of achieving

its political goals. Last but not least, the fourth factor is the Nord Stream project, which can be used by Russia in order to “cut off” Lithuania from any access to natural gas.

The four above mentioned factors prove that it is fundamentally important for Lithuania, together with its partners, to build the liquid gas terminal, establish electricity links with Poland and Sweden, and natural gas pipeline connection with pipelines of Poland. In addition, as a long-term project, building a new nuclear power plant is essentially important. To sum up, implementation of these projects, as well as introduction of the common EU energy policy and the active participation of the EU in the dialogue with Russia in order to protect its members’ interests, can ensure the energy security of Lithuania, at the same time strengthening its national security.

Endnotes

¹ Tomas Janeliunas, “Saugumo studijos-grizimas prie objektyvistinio analizes modelio” Politologija, 2004/2 (34), Vinius 2004, p.41

² Arunas Grebliauskas, “Analys of Threats to economic Security of Lithuania”, Lithuanian Annual Startegic Rewev (Vilnius, Lithuanian Military Academy, 2002), 279

³ Vaclovas.Miskinis, “ Nacionalines energetikos strategijos komentaru parengimas, galutine ataskaita” Lietuvos energetikos institutas, May 2005, http://www.lsta.lt/files/studijos/2007/20_NES_komentarai.pdf (accessed November 11, 2010)

⁴ Ceslovas Stankevicius, “Nacionalinio saugumo aspektai Lietuvos energetikos strategijoje” URM, January 2007, <http://www.elektroklubas.lt/pdf/IAE/%20Stankev.pdf> (accessed November 13, 2010)

⁵ Daniel Yergin, Ensuring Energy Security, 70, http://www.un.org/ga/61/second/daniel_yergin_energysecurity.pdf (accessed November 13, 2010)

⁶ Lietuvos Respublikos Seimas, Nutarimas del Nacionalines Energetikos Strategijos patvirtinimo, LRS, January 2007, http://www3.lrs.lt/pls/inter3/dokpaieska.showdoc_l?p_id=291371 (accessed November 13, 2010)

⁷ Daniel Yergin, Ensuring Energy Security, 71, http://www.un.org/ga/61/second/daniel_yergin_energysecurity.pdf (accessed November 13, 2010)

⁸ Arvydas Sekmokas, "Changing energy security environment in Lithuania-old challenges and new responses," Baltic Rim Economies, Aprile 2010, http://www.tse.fi/FI/yksikot/erillislaitokset/pei/Documents/BRE2010/BRE_2_2010_Artikkelit/BRE_2_2010_03.pdf (accessed November 14, 2010)

⁹ Lietuvos Respublikos Seimas, Nacionalinio saugumo pagrindu istatymas, LRS, November 2009, http://www3.lrs.lt/pls/inter3/dokpaieska.showdoc_l?p_id=359287&p_query=&p_tr2= (accessed November 14, 2010)

¹⁰ Lietuvos Respublikos Seimas, Nutarimas " Del Nacionalinio Saugumo Strategijos Patvirtinimo" ,LRS, January 2005, http://www3.lrs.lt/pls/inter3/dokpaieska.showdoc_l?p_id=249438 (accessed November 21, 2010)

¹¹ ibid

¹² Keith C. Smith, "Bringing Energy Security to East Central Europe, Regional Cooperation is the Key" Center for Strategic and International Studies, Aprile 2010, http://csis.org/files/publication/100402_Smith_BringingEnergySecurity_Web.pdf (accessed November 22, 2010)

¹³ Lietuvos Respublikos Seimas, Nutarimas " Del Nacionalines Energetikos Strategijos Patvirtinimo" ,LRS, January 2007, http://www3.lrs.lt/pls/inter3/dokpaieska.showdoc_l?p_id=291371 (accessed November 24, 2010)

¹⁴ Ceslovas Stankevicius, "Nacionalinio saugumo aspektai Lietuvos energetikos strategijoje", URM, January 2007, <http://www.elektroklubas.lt/pdf/IAE/%20Stankev.pdf> (accessed November 24, 2010)

¹⁵ Lietuvos Respublikos Vyriausybė, Nutarimo projektas "Del Nacionalines Energetikos (Energetines Nepriklausomybės) strategijos patvirtinimo", LRV, October 2010, http://www.enmin.lt/lt/activity/veiklos_kryptys/strateginis_planavimas_ir_ES/NES_projektas_2010_2050.pdf (accessed November 24, 2010)

¹⁶ ibid

¹⁷ The European Economic and Social Committee and the Committee of the Regions "Energy 2020 A strategy for competitive, sustainable and secure energy" Communication from the Commission to the European Parliament, the Council, October 2010 <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:52010DC0639:EN:HTML:NOT> (accessed November 25, 2010)

¹⁸ ibid

¹⁹ Keith C. Smith, "Bringing Energy Security to East Central Europe, Regional Cooperation is the Key" Center for Strategic and International Studies, Aprile 2010, http://csis.org/files/publication/100402_Smith_BringingEnergySecurity_Web.pdf (accessed November 27, 2010)

²⁰ Egidijus Motieka, Nortautas Statkus, Jonas Daniliauskas, "Global Geopolitical Developments and Opportunities for Lithuania's Foreign Policy," Lithuanian Annual Strategic Review 2004, (2005): 30

²¹ Roman Kupchinsky, "Energy and the Russian National Security Strategy" The Jamestown Foundation, http://www.jamestown.org/programs/edm/single/?tx_ttnews%5Btt_news%5D=35006&tx_ttnews%5BbackPid%5D=27&cHash=1b344dfc35 (accessed November 30, 2010)

²² Robert L Larsson, "Russia's Energy Policy: Security Dimensions and Russia's Reliability as an Energy Supplier," Swedish Defence Research Agency, March 2006, <http://www2.foi.se/rapp/foir1934.pdf> (accessed December 01, 2010)

²³ The Summary of The Energy Strategy of Russia for The Period of to 2020 (Moscow 2003), 2, http://ec.europa.eu/energy/russia/events/doc/2003_strategy_2020_en.pdf (accessed December 02, 2010)

²⁴ Roman Kupchinsky, "Energy and the Russian National Security Strategy" The Jamestown Foundation, http://www.jamestown.org/programs/edm/single/?tx_ttnews%5Btt_news%5D=35006&tx_ttnews%5BbackPid%5D=27&cHash=1b344dfc35 (accessed December 02, 2010)

²⁵ Steven Woehrel, "Russian Energy Policy Toward Neighboring Countries" CRS Report for Congress (Congressional Research Service, September 2009), 12, <http://www.fas.org/sgp/crs/row/RL34261.pdf> (accessed December 04, 2010)

²⁶ *ibid*

²⁷ Zeyno Baran, "Lithuanian Energy Security: Challenges and Choices" (Hudson Institute, December 2006), 15, <http://www.hudson.org/files/publications/LithuanianEnergySecurityDecember06.pdf> (accessed December 04, 2010)

²⁸ Borisas Nemcovas, "V.Putino rezimas pastatytas ant supuvusiu pamatu," *Geopolitika*, October 2008, <http://www.geopolitika.lt/?artc=2914> (accessed December 05, 2010)

²⁹ Arvydas Sekmokas, "Lietuva uz dujas moka mazdaug trecdaliu daugiau nei Vokietija," *Delfi*, September 2010, <http://www.delfi.lt/news/economy/energetics/asekmokas-lietuva-uz-dujas-moka-mazdaug-trecdaliu-daugiau-nei-vokietija.d?id=36502729> (accessed December 05, 2010)

³⁰ Robert L Larsson, "Russia's Energy Policy: Security Dimensions and Russia's Reliability as an Energy Supplier," (Swedish Defence Research Agency, March 2006), 194, <http://www2.foi.se/rapp/foir1934.pdf> (accessed December 05, 2010)

³¹ Zivile Satuniene, "Energy (In) Dependence and National Security of Lithuania," *Lithuanian Annual Strategic Review 2003* (Vilnius, Lithuanian Military Academy, 2004): 262

³² Lietuvos Respublikos elektros energijos ir gamtinių dujų rinkų metinė ataskaita Europos Komisijai (Vilnius, Valstybinė kainų ir energetikos kontrolės komisija, 2010), 21, http://www.regula.lt/lt/publikacijos/ataskaitos-europos-komisijai/2009_m_Elektros_ir_duju_rinkose.pdf (accessed December 07, 2010)

³³ The structure of AB Lietuvos Dujos shareholders, <http://www.dujos.lt/index.php/investors-relations/shareholders/1102> (accessed December 07, 2010)

³⁴ Division in Lithuania, "Will Lithuania's latest push to force the incumbent to relinquish control of the transmission system ultimately reduce prices or drive them higher?" EGM, June 2010, www.dujos.lt/uploads/files/dir31/dir1/19_0.php (accessed December 08, 2010)

³⁵ Nord Stream, Pipeline Route, <http://www.nord-stream.com/the-pipeline/pipeline-route.html> (accessed December 08, 2010)

³⁶ Nord Stream, Facts and Figures, <http://www.nord-stream.com/the-pipeline/pipeline-route.html> (accessed December 08, 2010)

³⁷ Robert L Larsson, "Russia's Energy Policy: Security Dimensions and Russia's Reliability as an Energy Supplier," (Swedish Defence Research Agency, March 2006), 195, <http://www2.foi.se/rapp/foir1934.pdf> (accessed December 08, 2010)

³⁸ Lietuvos Respublikos Vyriausybė, Nutarimo projektas "Del Nacionalines Energetikos (Energetines Nepriklausomybės) strategijos patvirtinimo", Vilnius, October 2010, http://www.enmin.lt/lt/activity/veiklos_kryptys/strateginis_planavimas_ir_ES/NES_projektas_2010_2050.pdf (accessed December 09, 2010)

³⁹ Lietuvos Respublikos Vyriausybė, Nutarimas "Del Gamtinių Dujų terminalo Projekto Pletros", Vilnius, July 2010, http://www.lrv.lt/Posed_medz/2010/100721/65.pdf (accessed December 09, 2010)

⁴⁰ A. Kubilius, "Klaipėdoje bus statomas suskystintų dujų terminalas," ATN.LT, July 2010, <http://ekonomika.atn.lt/straipsnis/60172/akubilius-klaipedoje-bus-statomas-suskystintu-duju-terminalas> (accessed December 09, 2010)

⁴¹ Lietuvos Respublikos Vyriausybė, Nutarimas, "Del Lietuvos Respublikos Gamtinių dujų istatymo pakeitimo istatymo koncepcijos patvirtinimo", Vilnius, May, 2010, www.lrvk.lt/bylos/Teises_aktai/2010/05/15325.doc (accessed December 09, 2010)

⁴² URM, Strateginiai projektai dujų sektoriuje, <http://www.urm.lt/index.php?-1226083570> (accessed December 09, 2010)

⁴³ Ministry of Economy the Republic of Lithuania, Treaty of Accession to the European Union 2003, Protocol No 4 on the Ignalina Nuclear Plant in Lithuania www.ukmin.lt/en/energy/nuclear/eudoc/doc/protokolas4_en.doc (accessed December 10, 2010)

⁴⁴ Tiekimo saugumas Lietuvos elektros energijos rinkoje, monitoring ataskaita (Vilnius, Lietuvos Respublikos energetikos ministerija, 2010), 4, http://www.ena.lt/pdfai/Monitoringas_2010.pdf (accessed December 10, 2010)

⁴⁵ Ibid 8,9

⁴⁶ Ibid 23

⁴⁷ Arvydas Galinis, Vaclovas Miškinis, Eugenijus Ušpuris, "Lietuvos elektros energetikos sektoriaus raida uždarius Ignalinos AE" Mokslas ir Technika, October 2010, <http://www.mokslasirtechnika.lt/mokslo-naujienos/lietuvos-elektros-energetikos-sektoriaus-raida-uzdarius-ignalinos-ae.html> (accessed December 11, 2010)

⁴⁸ Ibid

⁴⁹ Lietuvos Respublikos Seimas, Nutarimas “ Del Nacionalines Energetikos Strategijos Patvirtinimo” ,LRS, January 2007, http://www3.lrs.lt/pls/inter3/dokpaieska.showdoc_l?p_id=291371 (accessed December 12, 2010)

⁵⁰ Lietuvos Respublikos Seimas,Lietuvos Respublikos Atominės elektrinės istatymas, LRS, June 2007, http://www3.lrs.lt/pls/inter3/dokpaieska.showdoc_l?p_id=350515 (accessed December 12, 2010)

⁵¹ Gintautas Klevinskas,”Steps towards transparent nuclear legal and regulatory regime,” Lithuanian Energy Quarterly, Newsletter 2010 Q2 - Issue 2, 2010, http://www.enmin.lt/en/activity/veiklos_kryptys/strateginiai_projektai/Lithuanian%20Energy%20Quarterly%20%282010Q2%29.pdf (accessed December 12, 2010)

⁵² “Interview with the Minister of Energy Mr. Arvydas Sekmokas”, Lithuanian Energy Quarterly, Newsletter 2010 Q1 - Issue 1, 2010, http://www.enmin.lt/en/activity/veiklos_kryptys/strateginiai_projektai/Lithuanian%20Energy%20Quarterly%20%282010Q1%29.pdf(accessed December 12, 2010)

⁵³ Arvydas Sekmokas, “Changing energy security environment in Lithuania-old challenges and new responses,” Baltic Rim Economies, Aprile 2010, http://www.tse.fi/FI/yksikot/erillislaitokset/pei/Documents/BRE2010/BRE_2_2010_Artikkelit/BRE_2_2010_03.pdf (accessed December 12, 2010)

⁵⁴ LITGRID, Strategic projects, NordBalt, <http://www.litgrid.com/index.php?633577945> (accessed December 12, 2010)

⁵⁵ LITGRID, Strategic projects, LitPol Link, <http://www.litgrid.com/index.php?1937543676> (accessed December 12, 2010)

⁵⁶ “The EU approves co-financing of NordBalt project,”InterLinks,News,August 2010, <http://www.interlinks.lt/en/news/91.html> (accessed December 12, 2010)